

WHAT IS CLAIMED IS:

1. A signature creating apparatus which creates a digital signature, said signature creating apparatus comprising:

a clock in which time information is set only by a time authentication authority;

a connecting unit which connects the time information and an apparatus ID for specifying the creating apparatus to a plain-text and creates a connection data; and

a signature creating unit which creates the digital signature using the connection data created by said connecting unit and a key used only for creating a signature.

2. The signature creating apparatus according to claim 1, wherein said connecting unit connects personal identification information for identifying a person who has created the digital signature as well as the time information and the apparatus ID to the plain-text.

3. The signature creating apparatus according to claim 2, further comprising:

a storage unit which stores the personal identification information;

a judging unit which judges as to whether or not a person who updates stored contents of said storage unit is a person who has proper right; and

an updating unit which updates the stored contents of said storage unit only when said judging unit has judged that the person who updates is the person who has proper right.

5 4. The signature creating apparatus according to claim 1 comprises an unrewritable storage unit in which the apparatus ID is stored.

10 5. The signature creating apparatus according to claim 1, further comprises a confirming unit which confirms a working state of said clock,

wherein said signature creating unit creates the digital signature only when said confirming unit confirms that said clock works normally.

15 6. The signature creating apparatus according to claim 5, wherein said signature creating unit stops using of the key used only for creating the signature when said confirming unit confirms that said clock does not work normally, and creates  
20 the digital signature using connected information which does not include the time information and a key other than the key used only for creating the signature.

25 7. The signature creating apparatus according to claim 5, wherein said confirming unit confirms the working state of said

clock based on a result of comparing a driving voltage of said clock with a threshold.

8. The signature creating apparatus according to claim 5,  
5 wherein said confirming unit confirms the working state of said clock based on a result of comparing a time-counted result of said clock before certain time and a time-counted result at current time.

9. The signature creating apparatus according to claim 5,  
10 wherein said confirming unit brings a flag into ON state when said clock works normally, and brings the flag into OFF state when said clock does not work normally; and

wherein said signature creating unit creates the digital  
15 signature only when the flag is ON state.

10. The signature creating apparatus according to claim 1,  
further comprising a setting unit which sets the time  
information according to a time setting request, said setting  
20 unit being installed in the time authentication authority.

11. The signature creating apparatus according to claim 1,  
further comprising a correcting unit which corrects said clock  
automatically, said correcting unit being installed in the time  
25 authentication authority.

12. A signature creating apparatus which creates a digital signature using a common key method, said signature creating apparatus comprising:

5 a connecting unit which connects an apparatus ID for specifying a creating apparatus to a plain-text and creates a connection data; and

signature creating unit which creates the digital signature using the connection data created by said connecting unit and a common key only for signature creating.

13. A signature verification apparatus which verifies interpolation based on a digital signature created by a signature creating apparatus,

15 said signature verification apparatus having, a clock in which time information is set only by a time authentication authority;

a connecting unit which connects the time information and an apparatus ID for specifying a creating apparatus to a plain-text and creates a connection data; and

20 a signature creating unit which creates the digital signature using connection data created by said connecting unit and a key used only for creating the signature,

said signature verification apparatus having, a receiving unit which receives the plain-text to which

the digital signature is connected; and

a signature verification unit which verifies the interpolation using the digital signature, the plain-text and a key used only for verification of the signature.

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14. The signature verification apparatus according to claim 13, further comprising a signature verification key generating unit which receives cryptographic information about encrypting the key only for verification of the signature and decoding the cryptographic information so as to generate the key only for verification of the signature.

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15. A signature apparatus, comprising:

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a clock in which time information is set only by a time authentication authority;

a connecting unit which connects the time information and an apparatus ID for specifying a creating apparatus to a plain-text and creates a connection data;

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a signature creating unit which creates a digital signature using the connection data created by said connecting unit and a key used only for creating a signature;

a receiving unit which receives the plain-text to which the digital signature is connected;

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a signature verification unit which verifies interpolation using the digital signature, the plain-text and

a key used only for verification of a signature; and

a function selecting unit which makes a signature creating function effective in said clock, said connecting unit and said signature creating unit at the time of the creating, and making a signature verification function effective in said receiving unit and said signature verification unit at the time of the verification.

16. The signature apparatus according to claim 15, further comprising:

a switching unit which switches a function as a lower apparatus and a function as an upper apparatus; and

a key generating unit which generates a key used only for verification of the signature based on an apparatus ID for specifying another signature apparatus which is the lower apparatus and where the signature creating function is made effective when said key generating unit is switched so as to function as said upper apparatus by said switching unit and the signature verification function is made effective by said function selecting unit,

wherein the key used only for creating the signature and the key used only for verification of the signature are common keys in a common key method, and said signature verification unit verifies the interpolation using the key for the signature verification generated by said key generating unit.